

**ABSTRACT**

The present invention provides an oscillator or PLL circuit which can balance the characteristics of a circuit without being affected by noise from a signal line or a supply line. The present invention provides an oscillator comprising a resonance circuit has a first series connected circuit having coils and a power terminal, a second series connected circuit having capacitors and a varactor having directional characteristics, and a third series connected circuit having capacitors and a varactor having directional characteristics. The first, second, and third series connected circuits are connected in parallel. The varactors are connected so as to have opposite directionalities with respect to a connection side of the second and third series connected circuit. The capacities of the varactors are varied by external control. The varied capacities determine an oscillation frequency.